



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

*On the Life Assurance Companies of Germany—their Constitution, Condition, and Prospects : being the substance of a Paper presented to the Institute of Actuaries by HERR RATH G. HOPF, Manager of the Lebensversicherungs Bank für Deutschland in Gotha.*

[Read before the Institute of Actuaries, 29th November, 1852, and ordered by the Council to be printed.]

NEXT to England, Germany is the country in which the principles of life assurance have had the most successful development. It is true the more recent French Companies, La Caisse Paternelle, L'Equitable, La Caisse des Ecoles et des Familles, which also call the assurances granted by them *assurances sur la vie*, show a greater extension in a shorter time ; but what they guarantee to the public are not life assurances in our sense of the word. They are neither assurances granted for previously specified sums, nor is the payment of the claim dependent on the death of the assured. The more modern French life assurances are rather indefinite reversions obtained by paying in any sum the assured pleases, the interest of which (as in the Tontines), according to the mortality found to prevail in the different classes, may prove sometimes greater, sometimes less, and is only divided amongst those who attain the term of life which may have been previously agreed on. The contributions of those who die early, together with the interests thereon, go to augment the dividends to the surviving members. Whilst life assurance amongst the English and Germans is therefore calculated to be on the death of the assured a source of provision for their families, the more recent mode of life assurance amongst the French principally aims at granting to the assured himself, in his lifetime, an annuity or sum of money, which, increasing according as the computations are made for an earlier or later period, affords him the means of extending his business, of completing his education, of securing a dowry on marriage, or a provision in old age. In consequence, partly of the prospect of self-enjoyment of the reserve thus made, partly the possibility of obtaining a high profit for a small investment through a greater mortality in the classes than the tables assumed, this kind of assurance became very much in vogue amongst the French. Recently, however, a clearer understanding of the matter, and the exposure of some deceptions which a few of the Companies or their managers have been guilty of, have in some degree cooled the public favour. It is evident

that since the income is very indefinite and fluctuating, no fixed plan of life assurance can be founded thereon. The reflecting German had but little taste for it, and the attempts made by several of the modern Life Assurance Companies, out of Germany, to extend their operations there, were followed by no results. It is true that there have existed in France for a considerable period several Companies by which life assurances are granted in our sense of the word, that is to say, they undertake assurances by which, according to a fixed single or by periodical payments, a certain sum before stipulated is agreed to be paid on the death of the assured. This plan is followed by the mixed Proprietary Assurance Companies, *La Compagnie Nationale* (formerly *Royale*), *La Compagnie d'Assurances Générales*, and *L'Union*. But the operations of these Companies are very restricted, and the total of the assurances undertaken by them amounts to not more than about twenty to thirty millions of francs (£800,000 to £1,200,000). It seems that the "whole life" assurance, which in England and Germany is so much in favour, agrees but little with the French taste and character. The cradle for this kind of assurance was England. Whilst Widows' Funds, Burial Funds, and Annuity Companies first of all sprang up in Germany, France, and Holland, and that so early as the 17th century, and, even with very imperfect organization, prospered to a great extent, the first Life Assurance Company was founded upon the mutual principle in London in 1706, under the name of the *Amicable*. The regulations then established were still in some degree imperfect, like those of the older German Burial Clubs. Only persons under forty-five years of age were admitted. All members paid an equal contribution of  $7\frac{1}{2}$  per cent. entrance-money and 5 per cent. annually, and the receipts were divided each year in equal proportions amongst the representatives of those who died in the year. Although, soon after the establishment of the *Amicable*, other Life (acting also as Fire) Assurance Companies were founded (namely, the *London Union*, 1714, the *Royal Exchange*, 1720, and the *London Assurance Corporation*, 1720), still the system of life assurance progressed but little, till in 1762 the renowned *Equitable Society* commenced upon better and more scientific principles. Since then this kind of family provision has been more in favour; but it was long in England before it was appreciated by the public in general, and at the end of last century there were only about ten Life Assurance Companies, of which the greatest, the *Equitable*, at that time consisted of not

more than 5124 members. It was not till after the termination of the wars of Napoleon, when the blessings of freedom spread over all Europe, and all branches of human industry began to flourish, that life assurance also, through the establishment of numerous Companies, came to perfection ; and it was taken advantage of by all classes of the population. But scarcely any country can be pointed out where it spread so rapidly as in England, where the rights of primogeniture interested so many fathers of families to make provision by its means for their daughters and younger sons, not succeeding to the inheritance—where, besides, so many important undertakings, of which the success depends on individual exertions, lead to life assurance as a protection against losses likely to arise from premature death—where, above all, the possession of capital, as well for business transactions as for the education and improvement of the youth (which in that country is left, for the most part, to the care of private individuals) is of more value than upon the Continent. As it was in England that the precursors of life assurance, the Savings Banks, first found the most favourable reception, so there the Life Assurance Companies themselves have attained the most flourishing condition. There exist at the present time in England about one hundred and thirty Companies, of which very nearly one hundred have their chief office in London. This great competition, and the co-operation of the many distinguished men who dedicate their abilities to these Companies, have contributed to bring the system of life assurance in England to the utmost degree of perfection as regards both theory and practice, and to make known its value and profit to all classes of the people. The desire to outbid one another has indeed led some Companies into measures and arrangements by no means worthy of commendation. The number of Life Assurance Companies in England appears unnecessarily large, for many of them have so small an income that they can scarcely be in a position to make head for any lengthened period against unfavourable changes of events. The total amount of assurances for which all the English Companies are at present liable (not reckoning life annuities) may be computed at about £130,000,000 sterling, and the average amount of assurance on each life about £600 sterling, amongst a total of about 220,000 persons assured, the greater part of whom are English, although these Companies extend their business to all parts of the world. In a still higher degree than these Life Assurance Companies (which are specially adapted for the wealthier classes) do the Burial Clubs and the Friendly

Societies for provision in sickness and old age amongst the working classes flourish. One of these associations, the Manchester Unity of Odd Fellows, alone numbers no less than 150,000 members.

In Germany, about the year 1806, and also about 100 years after the oldest Life Assurance Company in the world—the Amicable, of London—had come into existence, the first attempt was made to form a similar Company, principally through the exertions of Benecke, of Hamburg, the well-known writer on assurance. The undertaking, however, found but little support, on account of the troublesome wars with which the interior of our country was torn; and the Company having at an early period sustained heavy losses, found itself soon under the necessity of closing the business. A second attempt was made in 1822, by the Fire Insurance Company then established in Elberfeld, to combine that branch with life assurance, but met with no greater success. Germany, scarcely freed from foreign oppression, and at that time too occupied with other more pressing interests, could not give to this undertaking the attention which was due to it, and thus it happened that it was again given up even before a single assurance had been actually completed.

But as the benefits of life assurance appeared so great, the attempt was again renewed, about the years 1826 and 1827, in Gotha (where Arnoldi had established the well-known Fire Insurance Bank with the happiest results), by the active exertions and under the direction of this patriotic man. He endeavoured first of all to make evident to the public the nature and advantages of life assurance, which up till that time was scarcely known in Germany. The small amount of life assurance which up till then had been effected was undertaken by English Companies. These last demanded high premiums, without allowing any return of profits. A prejudice was excited against them, by the fear that in disputed cases they would not be subject to the German laws, but that it would be necessary for any legal process to be carried on in the English courts, liable to their tedious prolixity and excessive costs. A remarkable instance occurred at that time in the action concerning the assurance undertaken by several English Companies on the life of the Duke Frederick IV., of Gotha. Two of the Companies paid; the other three refused payment. The policy-holders commenced an action against one of the latter, but could bring it to no issue, and were obliged to let it drop; for after three years' process, and before any decision had been given, the costs amounted to nearly 27,000 thalers (£3,857).

For a sum in dispute of £3,200, the mere fees of the plaintiff's counsel, the afterwards celebrated Lord Brougham, amounted to not less than £2,700.

This disheartening case served to enlighten the public on the necessity for the formation of a German Assurance Company, and to arouse them to carry out the plan already proposed in Gotha. This Company accordingly came into existence on 1st January, 1829, after having been in process of formation since 1827. The desire for life assurance awakened in Gotha soon began to spread throughout all Germany. Nearly at the same time with the Gotha Bank a Share Company for Life Assurance was established in Lubeck, and afterwards by degrees ten other Life Assurance Companies were founded, of which the principal regulations, so far as they have reference to the system of assurance, shall be here briefly explained.

I. The Life Assurance Bank for Germany in Gotha (*Die Lebensversicherungs Bank für Deutschland in Gotha*), depending upon its mutual character and the publicity of its management, was opened on the 1st January, 1829, with a total of 794 members and 1,390,900 thalers (£198,700) sums assured. Everyone is a participating member who opens a policy of assurance for life or survivorship with the Bank, and his share in profits is proportionate to the amount of annual premium paid by him. The average annual surplus, ascertained after five years' accumulation in the assurance fund, is divided amongst the participating members as profit. Every participating member receives on the sixth payment of premium the dividend of his year of entrance—on his seventh payment of premium, the dividend of his second year's membership, &c. The dividends not yet declared to him when his assurance expires, either by death or voluntary retirement, would remain to the account of the remaining policy-holders. Up to the present time the dividends have fluctuated between 18 and 31 per cent. of the annual premiums, and amount on an average to 24 per cent. Up till the period of division, the surplus of premiums forms the assurance fund, out of which the extra payments would be made, if at any time the annual receipts should not prove sufficient to meet the expenditure—a case which has not yet happened, and which, with the increase and extension of the Company, need never happen.

The Bank undertakes assurances for whole life, assurances for a given number of years (short period assurances), survivorship assurances, and assurances upon joint lives, by means of an easy division of the double claim in two survivorship policies. With other com-

plicated and less usual forms of assurance the Company has little to do, nor does it include to any great extent the granting of life annuities. It assures only the lives of persons resident in Germany who are healthy, and not such as, through their business, occupation, or manner of living, give reason to anticipate an early death. It accepts assurances for sums from 300 thalers (£43) to 10,000 thalers (£1,429) on one life.

The premiums have been specially computed. They have for their basis the table of mortality, published by the English mathematician, Babbage, from the experience of the Equitable Society of London, considerably modified by the experience on the Continent, especially at the higher classes of age, the mortality at which appears upon the Continent to be considerably greater than in England.\*

The table so obtained shows that out of 6460 persons at the age of ten years only ten are living at the age of 90, who at this age die together; whilst, according to Babbage's table, out of that number of persons at 10 years of age there are still 170 living at age 90, all of whom expire before 98 years of age. The premiums being computed by this table at 3 per cent. interest, would provide for any possible fluctuations of mortality by the increase arising therefrom, and up to the present time have not only proved fully sufficient, but have also given a higher average dividend than the addition thereto would lead to expect.

The Bank not only assures against the risk of death by disease of every kind, and against all accidents to which the assured is exposed, except through wilful negligence, but also pays the claims of those who have fallen in conflict for the restoration of peace and

\* Whether the mean duration of life on the Continent, and especially in Germany, is less than in England, cannot, for want of sufficient observations, be ascertained with certainty. It appears, however, that in England more people attain to a higher age than upon the Continent. According to the accounts of the census published in the year 1841, there were in England and Wales, out of 15,927,867 persons, 1,147,108, or 7·2 per cent., above 60 years of age, and amongst them not less than 249 were of 100 years of age and upwards. By the census in Belgium in 1831, out of 4,000,000 there were only 16 of 100 years of age and upwards. In Wurtemberg, in 1832, out of 1½ million there was only one of that age; and by the last census in Prussia, at the end of 1849, the number exceeding 60 years of age was scarcely 6 per cent. of the total population. The actual experience of the Gotha Bank, although it is not yet sufficiently extended to give a solution to this question on a positive basis, has up to the present time confirmed the above hypothesis. Notwithstanding that the table of mortality used by the Bank shows, for the higher classes of age above 55 years, an essentially greater mortality than all the approved English tables, still, according to the tenor of the reports of the Bank, the actual mortality at these ages is up to the present time, on an average, greater than was expected. (See Report for 1848, § 16.) It may, indeed, be a question, to decide what influence the frequent voluntary retirement of healthy members has on the increase of the mortality of the members remaining in the Company, and whether it is not equal to the profits which the outgoing members yield to the funds of the Company.

order, or in defence of their lives and property. The assurance suffers no prejudice by entering the militia; military men may be assured at the ordinary premium, and pay according to the risks of service in peace. The risks of active war service, which the Bank considers to begin when the troops are called into actual service before the enemy, after war has broken out, are excluded from the guarantee. In all these cases the policy-holder receives the value which the Bank would have given for the voluntary surrender of the policy. In cases of suicide *non compos mentis*, the full value is given. Military men also receive this higher return who relinquish their policies on account of war service, and do not apply for a suspension of them only.

The assured may travel within the limits of Christian Europe, and voyage on the East and North Sea between Havre and Portsmouth, without perilling the validity of the assurance, for the space of one year, and without giving information to the Office. Other and longer journeys require a license, and if greater risk is incurred a corresponding extra premium must be paid.

As the Gotha Bank was the first to excite and animate the desire for life assurance in Germany, it was also desired that its institution should keep pace with German wants and German peculiarities. In many respects, therefore, it must deviate from English models. Besides differing in the conditions of assurance, this is especially the case in the working out of the mutual principle. The mode of settling the rights and obligations of the members—the successive and entire division of the surplus by an annual average in proportion to the annual premiums contributed by the assured—is peculiar to this Company, and different from the plan hitherto pursued by most of the Assurance Companies in England. The Bank endeavours thereby to act with strict justice towards its members, and to pay back to each as far as possible that share in the surplus which he, by his payments of premium, has contributed towards it. It does not benefit one class at the expense of another. The greater part of English Companies ascertain the surplus after long periods, and allot it to the sums assured, frequently in a proportion arbitrarily fixed, but mostly on an increasing scale for the older members and in different degrees according to the different classes of age in the Company. The greater part of the purely mutual and mixed Companies existing in Germany have followed the principles of the Gotha Bank, and not those of the English Companies, so that the various systems of the latter are but little known amongst us.



Of the other peculiar regulations of the Gotha Bank, which it has first introduced into the assurance system on right theoretical principles and in harmony with the original basis, may be mentioned the following.

1. Every assurer may select from the proportionate tables of premiums any rate less than that at his own age of admission, and make up the difference by a single payment. The smaller premium is then the measure of his share in the Bank and in the surplus itself. The single payment devolves to the Company unconditionally, without having any dividends attaching to it. It is considered as a new assurance in the reserve, to be set apart in the same manner as if the assured had been admitted into the Company at the younger age to which the rate of premium which he has selected belongs.

2. In conformity with the basis of their premium tables, not only does the payment of premium cease on the assured attaining his ninetieth year, but he may also receive, on his attaining this age, the sum assured in his lifetime, since at this age the reserve is equal to the sum assured. But every member to whom the term of the ninetieth year appears too distant, may, if he desires to be placed in earlier possession of the sum assured or to cease paying the premium on reaching a higher age, when he may be less able to acquire an income, enjoy for a proportionate premium the advantage of ceasing to contribute and of obtaining the sum assured at any younger age he pleases.\*

A life assurance of this character is not exactly the means on the death of the assured of providing for his representatives, but it will enable him to make a provision for himself at a later period of life.

3. The advantage enjoyed by those who withdraw is definitely fixed by the Gotha Bank, and depends not in each particular case on what is called the market value of the policies. The Bank proceeds on the principle that, with few exceptions, the full value of the policy or the whole reserve should not be repaid, since the right to withdraw from the assurance compact belongs only to the assured, and since in most cases only healthy persons take advantage of it, whilst the invalid and deteriorated lives remain in

\* The increased premium is so computed that at the time of payment of the sum assured the reserve shall be equal to the full value paid. If, for instance, a person thirty years old wishes to receive the sum assured at sixty years of age, in case it should not have become a claim by death at an earlier period, he will have to pay, with his original premium, a further annual premium of '854 per cent. If this party has been already five years assured, when he first desires at the age of thirty to modify his assurance in the way described, the yearly premium will then only be '810 per cent.

the Company and occasion a greater mortality (as has already been shown to be the case at the older ages in the Gotha Bank), to equalize which the Company needs the profits from the withdrawing members. The practice of the Gotha Bank is theoretically correct, and consists in increasing the amount paid for the purchase, in proportion to the absolute value of the policies, allowing of a gradual increase to that point at which the full sum assured would be paid at last to the assured in their lifetime. Accordingly, when the reserve is—

Per cent. of the Sum Assured.	Per cent. of the Reserve.
1 to 20 a purchase price is allowed of	50
20 „ 22 „	51
22 „ 24 „	52
24 „ 26 „	53

By the same rule is regulated the amount which the Bank may advance to the assured on the mortgage of their policies. The Bank pays the full reserve, as before observed, only in a few exceptional cases—as, for instance, when the assurance is invalidated in consequence of some change in the circumstances of the assured, such as being called into actual military service, or by dying by his own hands (not *felo de se*). In cases of intentional suicide the usual price only is allowed.

4. Another regulation peculiar to the Gotha Bank is that the assurance may be temporarily suspended during a journey or a campaign, and during this time the payment of premiums is discontinued; provided that when the policy (the assured being in good health) is again in force, not the amount of the full premium that would have been paid in the interval, but only that portion of it by which the reserve would be increased, should afterwards be paid.

II. The German Life Assurance Company in Lubeck (*Die Deutsche Lebens Versicherungs Gesellschaft, in Lübeck*) was established at about the same time with the Gotha Life Assurance Bank, but issued its first policy about a month earlier, viz., on 1st December, 1828. It is constituted as a mixed Proprietary Company, and originally distributed to the assured a proportion of the profits every seven years, but now every four years. This proportion now amounts to three-fourths, whilst it was originally fixed at only one-half. The share capital, to the nominal amount of 1,275,000 marcs current (£76,500), is divided into 425 shares, each of 3,000 marcs current (£180), whereof £10 per cent. is paid up.

The Company undertakes a great variety of assurances, including, besides sums payable on death in the usual manner, also endowment assurances and life annuities. The first kind of assurances it grants in sums of from 300 to 30,000 marcs current (£18 to £1800), restricted to the lives of healthy persons who reside either in Europe or in countries not hitherto subject to the plague or yellow fever. The premiums for these assurances are similar to those of the Equitable Society of London. They are computed from the well-known Northampton Table at the rate of 3 per cent. interest, and since this table exhibits too high a rate of mortality, no addition is made thereto;\* at the younger ages they are somewhat higher, and at the older ages somewhat lower, than those of the Gotha Bank.

The Lubeck Company undertakes the usual kind of business ;

\* Whether the Company also values its reserve by the Northampton Table is not known. Such a proceeding is not to be recommended to them; on the contrary, those Companies which with the view of safety have computed their premiums according to one of the tables showing too high a rate of mortality, such as the Northampton or Süssmilch, should calculate the values of their policies by one of the tables which show the real mortality already experienced in the Company, or which may be expected for it. The tables most suitable for the computation of premiums for Life Assurance Companies are indisputably the excellent tables of Brune, deduced from the observations of the Prussian Widows' Provident Fund, and those constructed from the observations of the seventeen English Life Assurance Companies. The following comparison will show how the values will come out according to these and according to the Northampton. It will be seen that the value reserved, according to the latter table, at corresponding ages and periods of assurance (some few cases excepted), is too small. At the division of the surplus, a portion of the profits included in the premiums, and which belongs to the future, to cover unfavourable fluctuations of mortality, will by this process of calculation be anticipated out of the actual value of the risk.

*Reserve or Value of Policy, for a Whole Life Assurance of £100, payable by an Annual Premium computed according to three different Tables of Mortality.\**

After Years.	Age of Admission.			Age of Admission.			Age of Admission.			Age of Admission.			Age of Admission.		
	20.			30.			40.			50.			60.		
	17 English Life Companies.	Northampton.		Brune (Male).	17 English Life Companies.	Northampton.	Brune (Male).	17 English Life Companies.	Northampton.	Brune (Male).	17 English Life Companies.	Northampton.	Brune (Male).	17 English Life Companies.	Northampton.
5	4.19	4.21		7.07	5.95	5.44	9.21	8.73	7.35	12.86	12.14	9.53	16.69	16.14	13.68
10	8.97	8.82		14.49	12.69	11.49	19.10	18.23	15.28	26.02	24.50	19.77	32.51	31.32	28.23
15	14.39	13.77		22.42	20.31	18.00	29.50	28.15	23.34	38.37	36.68	30.74	45.50	45.05	42.48
20	20.52	19.29		30.82	28.60	25.02	40.15	38.26	32.02	50.07	48.15	43.19	57.20	57.10	55.64
25	27.46	25.23		39.72	37.27	32.15	50.14	48.22	41.32	59.68	58.51	54.65	71.23	71.52	66.41
30	35.01	31.63		48.82	46.10	39.83	59.60	57.60	51.21	68.34	67.61	64.41	82.20	77.52	74.07
35	42.89	38.13		57.36	54.79	48.06	67.38	66.07	60.90	78.71	75.59	73.05	..	85.75	88.48
40	50.93	45.13		65.46	62.98	56.81	74.38	73.52	69.84	86.89	83.03	79.19			
45	58.84	52.64		72.11	70.38	65.39	82.77	80.04	77.16	..	89.23	90.76			
50	66.30	61.62		78.10	76.88	73.31	89.40	86.13	82.37						

\* We have altered the arrangement of this table for greater convenience of comparison, and dropped one decimal figure.—ED. A. M.

but sea voyages are not allowed during war time, and in time of peace only on the Baltic, the North Sea, and the Channel between Havre and Portsmouth, during the seven favourable months from 1st April to 31st October; other voyages require a license from the Company, with payment of an extra premium. Assurances on the lives of military men may also be granted against military risks, on payment of an extra premium, to be specially computed in peculiar cases, and either of equal amount from the beginning of the assurance, or to commence with actual service. Death by duelling or suicide, or the hands of justice, invalidates the policy unless it be of ten years' standing, or unless a third party not connected with the representatives of the deceased has *bonâ fide* purchased the policy at the least two months before the death of the assured, according to the manner indicated in the statutes: in the last case, the full sum assured will be paid.

The division of profits to the assured is peculiar. It is regulated, not as usual, according to the total of the premiums paid, but according to the proportion of the sum assured and the number of years elapsed since the last division of profits, and is distributed in the next four years by coupons, either in cash payment or by deduction from the premium. This method bestows upon those assured at the younger ages a greater portion, at the cost of those who are assured at the higher ages. Only those members who survive to a division of profits partake of the dividends. Up to the present time there have been three distributions of profits: at the end of 1835 there was divided, on every £100 sum assured, ·2207 for one year; at the end of 1842, ·1842; at the end of 1849, ·2895, making together ·6944, consequently giving an annual average of ·2315.

III. The Leipzig Life Assurance Company (*Die Leipziger Lebensversicherungs Gesellschaft in Leipzig*) was established on the mutual principle about the year 1831, on a similar basis as the Gotha Life Assurance Bank, and is essentially governed by the same regulations. The Leipzig Company also derives its rates of premium from the Gotha Company, but fixes the age of 85 years for the stipulated period for the discontinuing of the premium, instead of 90 years, as in the Gotha Company. Other deviations consist in that it allots the dividends not exactly according to the surplus which is paid in each particular year, but from the existing surplus of several years combined disposes in each year of such a portion of the dividends as the directors may deem to belong to it; and that, with the extinction of the assurance, the proportion of the

dividends ceases for the years during which the assured has still paid the premium. The dividends—which every member, as in the Gotha Bank, enters upon with the sixth payment of premium—have fluctuated up to this time between 5 and 25 per cent., and amount on an average to 16 per cent., if we include both the years 1847 and 1848 in the account.

The Company undertakes assurances for lives, for terms of years, and for two lives, the last on condition that the sum assured should be paid on the death of the one dying first, and in sums of from 300 to 5,000 thalers (£43 to £714) on a single life. In case of withdrawal, it returns on whole life assurances one-third of the amount paid in.

The conditions of life assurance are nearly the same as those of the Gotha Bank; but in a new publication of the statutes, which up to the present time have remained unaltered, we expect stricter regulations as regards travelling, as well as, in some cases, of the return to be made in case of the cancelling of the assurance by suicide, military service, &c.

IV. The Hanoverian Life Assurance Company in Hanover (*Die Hannoversche Lebensversicherungs Gesellschaft in Hannover*), founded on the mutual principle in the year 1831, rests on a system of regulations differing from all other Companies, which is intended to avoid the heavy costs of management, and to confine the contributions to the limit of what is presumed to be actually necessary. It does not, therefore, as is usual, raise the average annual premium equalized throughout the whole duration of the life of the assured, and which, according to the risk of mortality increasing from year to year, requires the laying by of a corresponding reserve. The Hanover Company proceeds rather in the same way as the District Fire Insurance Funds, always ascertaining after the close of a year the amount required for the losses, expenses of management, &c. of the year, and dividing the contributions amongst the members according to a scale proportioned to their several ages, so that the older have to pay more than the younger, and each one just so much as the risk of mortality at the age at which he stands requires. From this it results that his contribution from year to year increases in that proportion in which he is exposed at every age to an augmenting risk. A limit, however, is placed to the excessive increase at the higher ages. From age 66, the factor of division for all later ages remains equal at  $5\frac{1}{4}$  per cent. of the sum assured. To secure the continuance of this advantage, every member pays, on commencing his assurance, a single entrance fee, and everyone assured for

the whole life pays annually, during the first ten years of his membership, a proportionate extra premium. Out of the fund thereby formed, every one of the assured above 66 years of age will have made up to him the amount required beyond the proportion of  $5\frac{1}{4}$  per cent. to complete the contribution, which he must pay yearly according to his actual age, and the risk of mortality corresponding thereto. Besides this, he must, as security for the punctual payment of the contribution to be called up at the end of each year, pay at the beginning of the assurance an advance to the funds to the amount of his probable first contribution. On the completion of the assurance, this sum is taken into account for his last contribution. The amount for every 100 thalers of sum assured, is—

AGE.	Contributions Yearly.	Single entrance money.	Yearly extra payment for first 10 Years.
	£.	£.	£.
20	·861	1·052	·267
30	·979	1·542	·396
40	1·361	2·312	·594
50	1·920	3·604	·927
60	3·653	6·142	1·608
66	5·250		2·521

This contribution scale is computed on a table of mortality peculiar to the Hanover Company, derived from the combination of several older tables; namely, those given by Süssmilch and Baumann, but which still deviates materially from the well-known Süssmilch-Baumann tables of mortality, and shows relatively a much smaller mortality. The rates of contribution are only those required according to the table for the mortality per cent. corresponding to each age, increased by five per cent. for the expenses of management. At the age of 50, the table shows 68 deaths out of 3,718 living—equal to a mortality per cent. of 1·829, which, increased 5 per cent., = 1·920, being the rate of contribution at age 50.

The Company only undertakes whole life and short period assurances. The extent of the guarantee is somewhat more restricted than usual. Sea voyages are not included in the license to travel, nor are the assured to go beyond a distance of 150 miles from their residence. No return is made on a voluntary withdrawal from the Society, nor in case of death by suicide or duelling; but in the event of the assurance being invalidated by reason of travelling beyond the limits or by reason of military service, the entrance money only, with  $2\frac{1}{2}$  per cent. interest, is allowed.

Since 1848, the Company has abolished, to the evident interest of its members, a division which formerly existed of the Assurance Company into three different classes, in proportion to the sums assured, whereof each one had to contribute for itself to the required payments on death. The union now includes all the members alike; sums of from 100 to 3000 thalers (£14 to £429) may be assured on one life.

The practical consequences of this system of contribution will be felt in the payments of the members rising from year to year, and they will become very burdensome when they reach to the higher ages. The older members will have to pay much higher contributions for their assurances than according to the ordinary system of equal average premiums, since the representatives of those who have died early have received the amount assured, for which much smaller amounts of premiums have been paid. It appears to us that the costs of management are not much reduced thereby, since the payments in advance, the entrance money and extra payments, together with the interest thereon, form a fund for management which is very insignificant compared with that which might have been formed from the reserved fund from equal average premiums.

S. B.

(*To be continued.*)

---

*On the Settlement of Losses by Fire under Average Policies.* By  
RICHARD ATKINS, ESQ., of the Sun Fire Office.

IT is a point well worthy of observation, that while England has been for centuries past so eminently practical in every branch of commercial enterprise, there have been but few attempts made until lately, to examine freely the well-worn rules of insurance business with a view to alteration. There has prevailed a general, and not altogether unwise, determination to let well alone, and quietly continue the system, however faulty, which experience had shown could lead to an ultimate and satisfactory profit.

Our continental neighbours, however, and especially our friends the Germans, have in modern times set a better example, and the pages of this *Magazine* continually give striking proofs of the careful manner in which facts are now collected on every hand, and brought forward for the purpose of scientific inquiry in all branches of the business of insurance.

There are, as is well known, two great varieties of policies